

XXI.—Note on the Relationship of Cannabinacæ.

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It appears to be a growing conviction that the apetalous Exogens are not so intimately connected with each other as was formerly thought, but merely held together by the artificial character of not possessing perfect flowers, and that their relationship is to be sought rather amongst plants possessing both calyx and corolla than amongst those forms with which they have hitherto been associated. The number of apetalous orders kept systematically apart from petalous ones is constantly diminishing as the links connecting them with more highly developed types are discovered; nevertheless a good many still remain to be disposed of, and amongst them are the Cannabinacæ, an order composed of three species, viz. *Cannabis sativa*, Linn., *Humulus Lupulus*, Linn., and *H. japonicus*, Sieb. et Zucc. Whilst fully admitting their intimate connexion with the Moreæ, Artocarpeæ, and Urticææ proper, they seem to present a number of characters proving them close allies of the Acerinæ and Malpighiacæ. They agree with both in having opposite leaves, an imbricated calyx, suspended ovules, indehiscent fruit, exalbuminous seed, and convolute embryo. They share with Acerinæ the palmatinerved leaves and bifid stigma, with Malpighiacæ the occasional climbing habit, hair affixed in the middle, stipules, paniculate flowers, solitary ovule, and superior radicle, showing the balance to be in favour of Malpighiacæ. Without overrating habit, it is entitled to some weight. Whilst there is not a single winding Urticæa, Artocarpea, or Morea, there are two winding Cannabinacæ and a number of winding Malpighiacæ. Hair affixed in the middle, so frequent amongst Malpighiacæ, occurs in *Humulus japonicus*, but not in any other Urticaceous or other order of Dicotyledons, except Papilionacæ (*Indigofera*). The presence of stipules and paniculate flowers is also important, whilst the solitary ovules and superior radicle are still more important considerations. The strong diclinous tendency and solitary carpels of Cannabinacæ will probably be raised as objections to the view here ventilated, as being against the alliance with Endlicher's *Acera* and Lindley's *Sapindales*. It must, however, be remembered that polygamous flowers are common both in Acerinæ and Malpighiacæ, whilst hermaphrodite ones are by no means rare in *Humulus* as well as in *Cannabis*. (Conf. Masters in 'Gardeners' Chronicle' and Regel's 'Parthenogenesis.') Nor do the solitary carpels present any difficulty. Petiveriacæ, which do possess such solitary carpels, have already been ranged by Lindley between Sapindacæ and Acerinæ. In fact, Lindley's diagnosis of Sapindales—"Hypogynous Exogens,

with monodichlamydeous unsymmetrical flowers, axile placentæ, an imbricated calyx and corolla, definite stamens, and little or no albumen"—virtually includes Cannabinaceæ, though placed by that author in a different alliance; and by adding to Endlicher's definition of his 'Acera' "carpidia interdum solitaria," the Cannabinaceæ are no longer excluded from them.

XXII.—*A Catalogue of the Zoophytes of South Devon and South Cornwall.* By the Rev. THOMAS HINCKS, B.A.

[Continued from p. 30.]

MEMBRANIPORA, De Blainville (*continued*).

13. *M. discreta*, n. sp. Pl. XII. fig. 1.

Cells oval, distant, distinct, varying in size, and irregularly disposed; the margin cut into about sixteen lobes, supporting as many spines, which bend over the aperture. Ovicell small, globose, minutely frosted.

On shell, from the Brixham trawl-boats.

In this species the cells are remarkably disconnected one from the other. They seem as if lying together in a group rather than united in one structure. They are also not uniform either in size or arrangement. The crenation or lobing of the margin is a very distinctive character. Each spine springs from a little boss on the edge of the cell.

LEPRALIA, Johnston.

1. *L. Brongniartii*, Audouin.

Very abundant from deep water, and also in moderate depths.

2. *L. Landsborovii*, Johnston.

Not common: Start Bay and from the Brixham trawlers, on shell; on *Sertularia abietina*, from 30 fathoms depth, coast of Cornwall.

[Abundant off the Great Orme's Head, North Wales.]

3. *L. reticulata*, Macgillivray.

Very common in deep water: one of the most abundant species on the Cornish *Pinna* from 60 fathoms, forming exquisite patches on the interior surface of the shell; on stone, from 40 fathoms; on *Eschara foliacea*, Devon, &c.

4. *L. auriculata*, Hassall.

Not rare: Torbay; on *Pinna*, 60 fathoms, &c.

[Off Maughold Head, Isle of Man.]